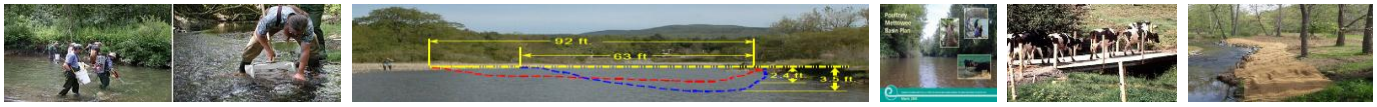
Vermont Department of Environmental Conservation

Watershed Management Division

Chapter 4. Tactical Basin Planning: Managing Waters along a Gradient of Condition using a Geographically Targeted Approach.



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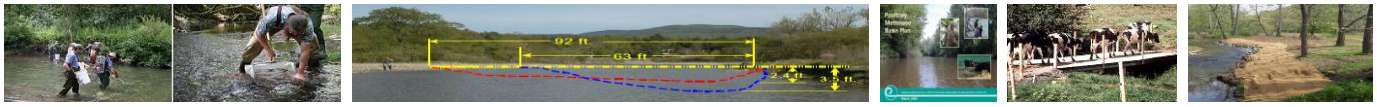
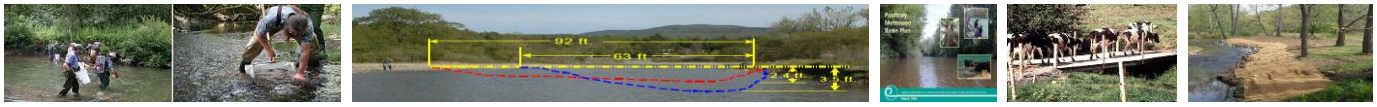


A. Introduction

In 2010, the WSMD was reshaped to create an organizational structure and management tools designed to promote the implementation of integrated water resources management. The WSMD reorganization provides a coordinated, efficient means of managing water resource issues through entire watersheds, with the primary objective of maximizing environmental benefit and water resource protection. This effort included three primary components:

- As a **first step**, the WSMD integrated its monitoring, assessment and planning sections into a new Monitoring, Assessment and Planning Program (MAPP). Effective watershed management begins with effective planning, which must have a solid, scientific foundation for decision-making. The water resource planning process is closely linked to and dependent upon monitoring and assessment activities. The creation of MAPP will enhance holistic monitoring, assessment and planning through an integration of the WSMD's water resource programs.
- The **second step** in promoting integrated watershed management was the development of the Statewide Surface Water Strategy. The Strategy serves as an overall guide during the development of basin plans by focusing management, planning, regulatory and funding efforts on basin-specific stressors, thereby allowing for prioritization of efforts to maximize environmental gain. The Strategy will be used by basin planners, stakeholders and the public to indentify and collectively prioritize the stressors impacting each basin and sub-basin.
- The **third step, described in detail below,** is the Tactical Planning Process, which is WSMD's revised approach to watershed-specific management planning. These revisions are based on years of planning and resource management experience by the WSMD. The WSMD recognizes that the basin planning process needs "buy in" from a large constituency, including federal, state, local agencies, the Legislature, watershed councils, planning groups, and the public. Over the past two years, the WSMD has engaged all of these constituencies in discussions regarding the benefits of the tactical planning process, which is described completely in this Chapter.

In the following, WSMD describes the current Federal and State requirements for basin planning, and describes the challenges associated with the "Guidelines for Watershed Planning" approach that was conducted during the prior 15-year period. The revised Tactical Planning Approach is then described, and a timeline and framework for implementation of individual plans is presented.

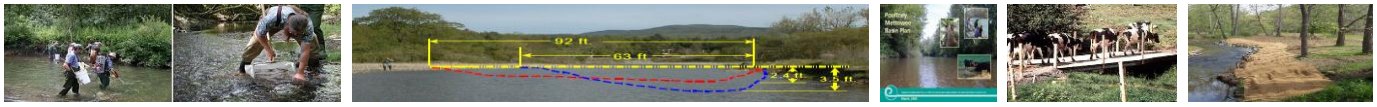


B. Federal and State Law Requirements for Basin Planning

Basin planning is required by both federal and state law. Section 303(e) of the federal Clean Water Act (Public Law 92-500) requires that states engage in water quality planning. 40 CFR 130, in part, directs state agencies to prepare basin plans, to focus on priority issues and geographic areas, to identify priority point and nonpoint water quality problems, consider alternatives and recommend control solutions and funding sources. At the state law level, basin and watershed planning requirements are found in a number of statutory and regulatory provisions, including but not limited to 10 V.S.A. §§ 1251, 1253 and 1258, and Section 1-02.D of the Vermont Water Quality Standards (VWQS). VWQS §1-02.D. requires that basin plans:

- Inventory the existing and potential causes and sources of pollution that may impair waters
- Establish a strategy to improve or restore waters and to ensure full support of uses
- Identify strategies, where necessary, by which to allocate levels of pollution between various sources as well as between individual discharges
- To the extent appropriate, contain specific recommendations by the Secretary that include but are not limited to:
    - the identification of all known existing uses, salmonid spawning or nursery areas important to the establishment or maintenance of such fisheries
    - reference conditions appropriate for specific waters
    - any recommended changes in classification and designation of waters
    - schedules and funding for remediation, stormwater management, riparian zone management, and other measures or strategies pertaining to the enhancement and maintenance of the quality of waters within a basin.
- In basins that include Class B waters which have not been allocated into one or more Water Management Types pursuant to VWQS §3-06, the basin plan shall propose the appropriate Water Management Type or Types based on both the existing water quality and reasonably attainable and desired water quality management goals.

10 V.S.A. §1253(d) provides that basin plans must be developed on a five year rotational basis. Until 2010, basin plans had been prepared by the WSMD in accordance with the "Vermont Watershed Initiative – Guidelines for Watershed Planning (Guidelines)," which was developed in collaboration with numerous stakeholders and the public in a mediator-led effort before the Vermont Water Resources Panel. The Guidelines described the guiding principles of basin planning, the necessary contents of basin plans, the planning process and required public notification and laid out the steps of, and a potential schedule for, plan development and plan review and approval. Upon submittal of a basin plan adopted by the



Secretary, the Water Resources Panel was required to promptly initiate rulemaking and give due consideration to the recommendations contained in the basin plan.

C. Basin Planning – Prior Framework and Challenges

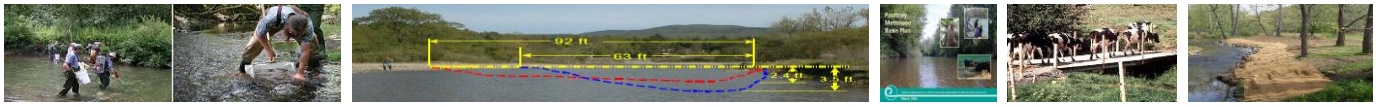
Based on extensive experience in applying these requirements over the past decade, the WSMD has identified several primary challenges with the current framework. This section briefly describes the prior "Guidelines" basin planning process and associated challenges.

The initial phase of the "Guidelines" basin planning process involved a grass roots approach: holding public forums to describe issues and learn of local concerns; forming a Watershed Council and facilitating Council meetings; ranking issues in order of priority; holding panel discussions on watershed topics of interest; formulating strategies to address the issues with the public and the Council; developing surface water management goals; and with the public, collaboratively writing the watershed plan.

The second phase, still largely unchanged, involved on-the-ground watershed assessment, protection, and restoration projects to improve water quality as called for in the Basin Plans. In addition to traditional biological, chemical and physical water quality monitoring efforts, other assessment-type projects include Phase I and II stream geomorphic assessments that identify physical conditions and health in rivers and streams; bridge and culvert inventories that review the adequacy of these structures for road and stream protection and fish passage; and dam inventories. Protection and restoration projects include: riparian buffer re-establishment, stream channel restoration and habitat improvement; trash/debris removal; selective dam removal; stormwater and agricultural best management practice implementation; securing easements; educating landowners; and working with municipalities on local protection strategies.

Monitoring, Assessment, and Planning Challenges – the Role of the WSMD's MAPP

The current DEC water programs produce a myriad of different types of "plans" including basin plans, watershed plans, source protection plans, river corridor plans, TMDLs, wastewater treatment facilities plans, delineation of waste management zones, assimilative capacity determinations, wasteload



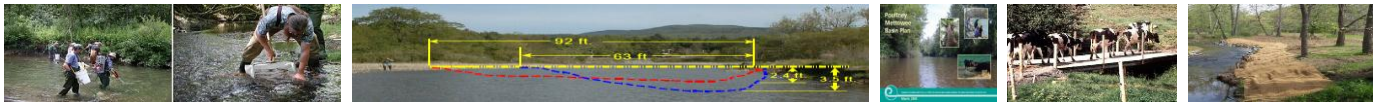
allocations, and delineation of water withdrawal drawdown areas. The development and management of these types of plans has often been considered in a standalone fashion, and rarely been perceived as part of a larger systematic integrated watershed management process. Many of these processes were not incorporated into the Guidelines approach to Basin Planning. This disconnect sometimes resulted in the absence of an effective and systematic alignment of water resource protection and improvement projects in priority intervention areas. The intent of the tactical planning process it to integrate the highest-priority item from all of these standalone documents into a compendium of highest-priority actions to protect and restore surface waters.

In the past, surface water assessment on a state-wide and watershed level was also less prioritized and coordinated than at present. Despite having a rotating basin monitoring and assessment framework, monitoring and assessment was often carried out in response to outside pressures. The MAPP now directs the majority of monitoring and assessment activities specifically towards areas of highest need within current rotation basins, allowing for priority setting that promotes the effective and efficient use of Agency resources both on a state-wide and watershed basis, with transparency to watershed partners. Actual priority setting for monitoring and assessment activities is accomplished by the WSMD management team in conjunction with watershed partners, and includes a proactive component that can identify threats to water resources and evaluate and prioritize risks. The MAPP Program uses these data deliberately and proactively to identify critical areas for surface water protection or project development, resulting in a positive impact on the development of proactive watershed management plans. The Surface Water Quality Monitoring Strategy is a standalone Appendix to the Vermont Surface Water Management Strategy that outlines these monitoring and assessment approaches.

Other Challenges

There are a number of other challenges that have impacted the efforts of the WSMD to efficiently and effectively develop and implement basin plans. Examples of challenges include:

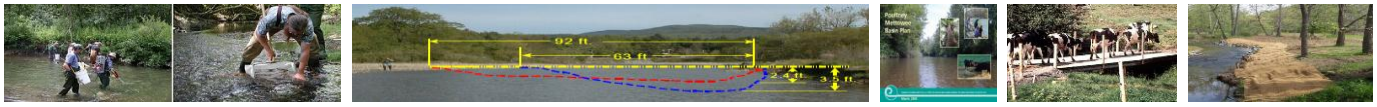
- The "Guidelines" approach featured an emphasis on general water quality education prior to Plan development: A large challenge encountered in the watershed planning process is that it takes far more time than initially anticipated to carry out an inclusive, educational process involving the many stakeholders in a watershed to develop a watershed management plan that all of the public will identify with and implement. This grassroots effort in some river basins has started from square one as no watershed organization existed. In those instances, the DEC Watershed



Coordinators formed diverse and inclusive watershed councils, conducted numerous public forums and panel discussions in order to provide the council and other interested persons with the technical information necessary to formulate strategies, supported the "typing and classification" process, and further developed the information needed to draft the plan. In several instances, once the process had been completed, coordinators would work with entirely different sets of watershed partners to actually implement the Plan. Thus, coordinators are educating one stakeholder group who formulates the plan, while working with another in the implementation of plans, resulting in inefficiency and a lack of common goals. However, the Division recognizes that good public process is absolutely essential to successful basin planning, and must remain an integral part of tactical planning. The tactical planning process in essence reverses the planning and education components of the prior Guidelines approach. Plans are developed initially to reflect how State programs are targeted to priority areas identified by monitoring data. The approaches to do so are then communicated incrementally to broader stakeholder groups prior to approval of the tactical plan. The intent is that watershed stakeholders, the regulated community, and citizens are able to see where the problems are, why they are so-identified, and how they will be addressed, and will also have the opportunity to identify what is missing from a tactical plan prior to its approval.

- Water Management Typing. The concept of Water Management Typing was incorporated into the VWQS in recognition of the fact that a more finely scaled suite of uses could better tailor water quality criteria and management strategies, including permit requirements, to protect Vermont's waters. Class B waters now encompass a wide variety of waters – e.g. upland mountain brook streams, major valley rivers, tailraces below hydroelectric dams. Under WMT, Class B waters may be assigned into one of three subtypes – B1, B2 or B3. Each WMT represents a more refined description of a Class B water based on more detailed criteria for aquatic biota, wildlife and aquatic habitat, hydrology, boating or aesthetics. VWQS §1-02.D.5 provides that a basin plan shall propose the appropriate WMT(s) based on both the existing water quality and reasonably attainable and desired water quality management goals.

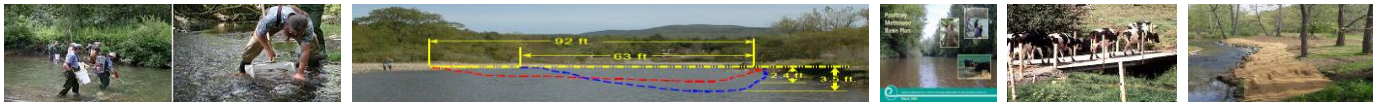
  Water management typing in basin plans has proven to be difficult for a number of reasons, and only two basin plans (White River and Poultney-Mettowee) include water management typing recommendations. The first basin plan to include water management typing was for the White River in 2002. As authorized by the Legislature in 2007, two



additional basin plans (Basin 11 - West/Williams/Saxtons and Basin 14 - Waits/Wells/ Ompompanossuc/Stevens) were adopted by the Secretary in 2008 without water management typing recommendations. In response to Act 43 of the 2007 legislative session, ANR provided to the Vermont General Assembly in January 2008 a report entitled "Alternatives to Water Management Typing." The report provided some important history and background related to water management typing. The report also offered several alternative approaches to typing that rely on the expansion of existing authority under Vermont's Anti-Degradation Policy. These approaches were presented to serve in place of water management typing.

A fifth and sixth river basin plan (Basin 5 - Northern Lake Champlain direct watersheds and Basin 7 - Lamoille), were issued as "Approved" plans in February 2009, relying on authorization provided by the Legislature. Neither of these plans contained recommendations concerning water management typing. Signature by DEC and ANR on both documents, representing plan approval (versus final "adoption"), occurred in October 2009. Further, the Legislature authorized two local regional planning commissions to prepare water management typing recommendations for the White and West/Williams/Saxton's River Basins by January 2011. Since that time, four new river basin plans have been developed with the respective councils and Watershed Coordinators holding meetings and prioritizing issues. These plans were developed coincident with the development of the tactical planning process, and are considered hybrid plans. These are the Otter Creek (Basin 3), Winooski River (Basin 8), Ottauquechee/Black drainage (Basin 10) and the Lake Memphremagog/Coaticook drainage (Basin 17). These plans were finalized in early 2012. The Department has continued to report to the Legislature annually on the progress of plan development and issuance, and on the challenges associated with Water Management Typing. The reader is referred to the 2010 and 2011 Legislative Reports on Basin Planning for a more complete description.

As of the date of this Strategy, an agreed upon alternative to, or modification of, water management typing has not been achieved. Given this, the tactical planning process



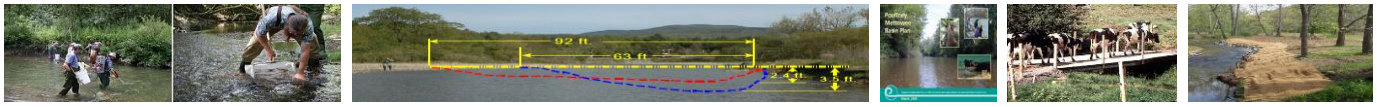
recommendations described below do not include water management typing as a major component of the basin planning process, but envision that one or more of the alternative approaches will be achieved, including reliance on several other classification approaches described in Section N of this Chapter. Tactical Plans will in all instances identify surface waters that attain conditions that can provide justification for augmented protections. The WSMD continues to participate in stakeholder meetings to discuss water management typing, basin planning and anti-degradation, as well as other potential approaches for refining the identification and protection of Vermont's surface waters.

D. The Future of Basin Planning – "Tactical Basin Plans"

The Tactical Basin Planning Framework espoused by this Strategy is not a new program, but rather a way of coordinating existing programs and building new partnerships that will result in efficient and environmentally sound management of Vermont's surface water resources. Inherent in the design of the Framework is the belief that many stakeholder groups and individuals must have ongoing opportunities to effectively participate in planning for the management of Vermont's watersheds. Further, the framework envisions a tight coupling between the priorities expressed in tactical basin plans, and the project-level work funded by the Ecosystem Restoration Program and other state and Federal water quality improvement funding programs. This chapter describes the process for developing individual, basin-specific and geographically explicit plans, establishing priority monitoring and assessment approaches, and, permitting or project-level initiatives to protect or restore surface waters.

E. Principles of Tactical Basin Planning

1. Tactical basin plans will be developed according to the goals and objectives of the Vermont Surface Water Management Strategy to protect, maintain and restore the biological, chemical, and physical integrity, and public use and enjoyment of Vermont's water resources, and to protect public health and safety.
2. Each of the tactical basin plans will contain objectives, prioritized strategies, benchmarks and tasks in order to facilitate the implementation of the plans.
3. Priority will be given to those basins and sub-basins for planning and direct remediation actions where there are the most serious water quality problems or where surface waters in excellent condition and valuable aquatic features deserve greater protection.
4. Each plan will spell out clear, attainable goals and targeted strategies to achieve those goals. The goals will be stated for the river basin and for individual sub-basins. A final plan should



contain a 'report card' by which progress can be tracked with regard to measurable indicators of each major goal and will:

a. Address the major (highest priority) water quality stressors

b. Identify surface waters in excellent condition (from biological, chemical, and physical assessment information)

c. Address legal requirements for a basin plan

d. Define clear roles for each participant

e. Provide understandable connections between the roles of all participants and the environmental outcomes

f. Track the outcomes and monitor the commitments of the participants

There are seventeen major river basins that heretofore have served as hydrologic planning units in which monitoring and management strategies will be focused. Within these major river basins, tactical basin plans will be developed then updated on a five-year cycle as specified by the Water Quality Standards. The tactical plans will identify *priority sub-basins* for enhanced monitoring, assessment, and project development within the lifecycle of each plan. The general idea is to focus resources and attention on a more concentrated area in a more coordinated fashion with the various stakeholders so that better utilization of resources (i.e., technical assistance and funding) can be achieved. Ultimately, each tactical planning process will produce a continually-evolving implementation table that rotates through the priority subbasins. In this way, updating a tactical plan after five years will become a simple process of taking stock or progress, elevating unfulfilled projects to higher priority, and introducing new strategies or projects.

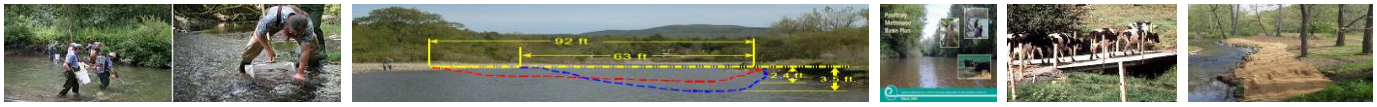
The Tactical Basin Planning Framework provides the following benefits to interested stakeholders and Vermont's citizens:

- More cost-effective use of public and private funds
- Better information to guide decision making for major river basins
- Increased ability (by ANR and partners) to resolve complex surface water resource problems
- Improved communication and coordination among governmental agencies
- More opportunities for stakeholders to get involved
  Increased ability to demonstrate results and benefits of environmental management

F. Process for Developing Tactical Basin Plans

Step 1 - Scoping and information gathering (monitoring and assessment)

For targeted basins (and sub-basins) within the rotational queue (see Figure 1. Basin Map for basin boundaries and planner assignments), there will be a compilation of existing assessment data including but not limited to biological assessment data, stream geomorphic assessments (and corresponding river



corridor plans), chemical water quality monitoring data, lake assessments, rare-threatened-endangered species, natural community inventories, among others. In addition to data compilation, this may include attendant process information such as:

- Assessment protocol - including the identification of very high quality waters and existing uses.
- Initial prioritization process (based on review of assessment information) for highest priority protection, restoration, and conservation actions
- Summary of assessment data and reports used in the prioritization process

Step 2 - Prioritization and Targeting of Resources (internal State process)

A series of pre-basin planning meetings within ANR programs (within DEC – Watershed Management, Groundwater and Drinking Water Protection, and Waste Management Divisions, DFW – Fisheries, and DFPR – Watershed Forestry as examples) and external to ANR (Agency of Agriculture, food and Markets, VTRANS) will be held to review current and long term water quality monitoring data, discuss known issues in the basin, direct additional, near term monitoring, identify both protection and restoration priority projects , and current levels/ areas of funding. This formula is an inter-agency tool for prioritizing sub-basins within a major river basin for further action, based upon a ranking system that considers both ecological and human health to meet restoration and protection goals and objectives. It provides a basis for decision making and targeting of program resources.

Step 3 - Prioritization and Targeting of Resources (external)

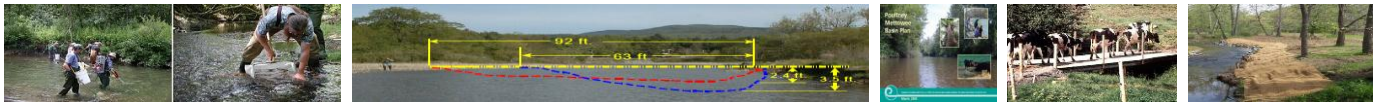
Once current monitoring and assessment data has been compiled and reviewed, DEC will initiate external stakeholder meetings with sister agencies, technical entities, watershed and other organizations (e.g., Conservation Districts, Watershed Associations, Regional Planning Commissions, etc). The group will identify and coordinate shared priorities and develop their "tactical" approach to planning and project implementation for the basin in queue. In addition, DEC will identify partner programs for areas of mutual opportunity – funding and project priorities.

Step 4 – Public Outreach and Awareness of the Basin Planning Process

Once outlines for a tactical plan are assembled, public forums and targeted meetings will be convened to present data on known impairments as well as waters exhibiting very good to excellent biological or physical integrity (or other high quality characteristics), to identify and solicit public input to identify gaps and seek recommendations on priority areas (surface waters) for protection and restoration identified in Steps 1-3.

Step 5 - Development of Tactical Basin Plans and Attendant Strategies

Develop draft workplan that identifies priority projects and enhanced program implementation. Workplan elements will include strategies for the protection of very high quality waters, remediation of impaired



waters remediation, and project-specific recommendations for stressed waters. Priorities will be identified as per concurrent management plans (e.g. river corridor management plans, source protection plans) and the stakeholder prioritization process. The final plans and implementation tables will be presented at a final round of public meetings/ presentations.

Step 6 – Implementation of Tactical Basin Plans

Initiate implementation of tactical plan. Develop agreements and MOUs between stakeholder groups as to the lead partners for project implementation and identification and procurement of project funding sources.

Proposed Tactical Basin Planning Timeline for a Specific Basin

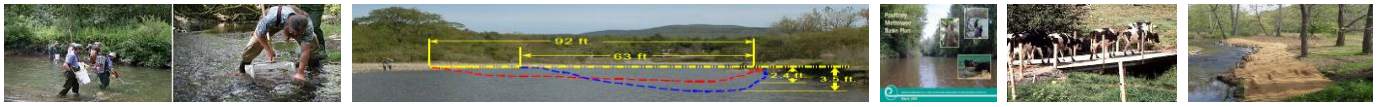
Tactical Basin Planning Timeline	Month																							
Task	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Scoping and information gathering (monitoring and basin assessment info compiled)																								
Prioritization and Targeting of Resources (internal) Identify and Secure Sources of Funding																								
Prioritization and Targeting of Resources (external) Identify and Secure Sources of Funding																								
Public Outreach and Awareness of the Basin Planning Process SW Plan and draft Tactical Plan presentation																								
Development of Tactical Basin Plans and Attendant Strategies																								
Implementation of Tactical Basin Plans																								
Milestone(s)	Initial Assessment Report drafted						Final Assessment Report produced, Initial Tactical Plan drafted						Final Tactical Plan produced, Implementation Table, Report card drafted						Track implementation progress via report card, Sequence Rotational Basin Planning Process (ongoing)					

G. Stakeholder Process

The specific stakeholder outreach sequence associated with the steps outlined above is as follows:

1. Invite technical (internal) partners to consider their role for plan coordination and implementation and how this collaboration can be mutually beneficial. Develop a core group of internal staff responsible for construction of the Tactical Plan. VAAFM would be consulted at this point to identify specific agriculture actions.

2. External outreach to determine which programs would complement the effort to coordinate existing programs to protect or improve water quality. Solicit input from intra-agency programs (WSMD, DEC, ANR, other technical partners) in how this can be achieved.



3. Solicit input from external programs (Examples include but not limited to: USDA-NRCS, VTrans, ACOE, USFWS, VACD-NRCDs, etc).

4. Identify and reach out to advocacy organizations, major private sector entities, and other relevant stakeholders.

5. Conduct media outreach at release of draft plan for public comment, and at final plan signature and release.

Tactical Planning Basins.

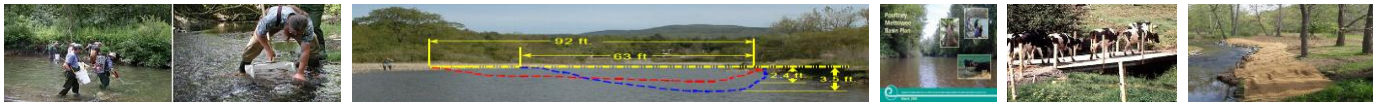
Under the "Guidelines," it was envisioned that Basin Plans would be developed for the 17 unique planning watersheds in Vermont (Figure 1). While most of these basins reflect true watershed boundaries or logical watershed groupings (e.g., Winooski River, or Wells, Waits, Ompompanoosuc Rivers), others, such as Basin 4, 5, or 13, reflect neither watershed boundaries per-se, nor logical groupings of communities that share a sense of common attachment to surface waters. As such, the Tactical Planning Process intends to package the watersheds into 15 revised planning basins. These regions are intended to ensure that small areas occurring outside of major planning watershed, but that share common landscapes, communities, and organizations are included in planning processes of maximum relevance to the citizens of those areas. To accomplish this, the WSMD Division, using the tactical Planning Process, will develop plans that:

1) Parse the small lower Basin 16 (direct to CT River) subwatersheds with Basin 14 or 9 as appropriate, to create the Wells, Waits, Ompompanoosuc and Middle CT River Tactical Plan, and the White River Region Tactical Plan;

2) Parse the small Basin 13 subwatersheds with Basins 10, 11, and 12;

3) Merge Basin 2 and 4 to create the South Lake Champlain Basin Tactical Plan;

4) In addition, for the period 2012-2013, an initial tactical basin plan is being created that packages the Basin 15 (Passumpsuc) and 16 (North CT River Direct) to create a North Connecticut River Tactical Plan.



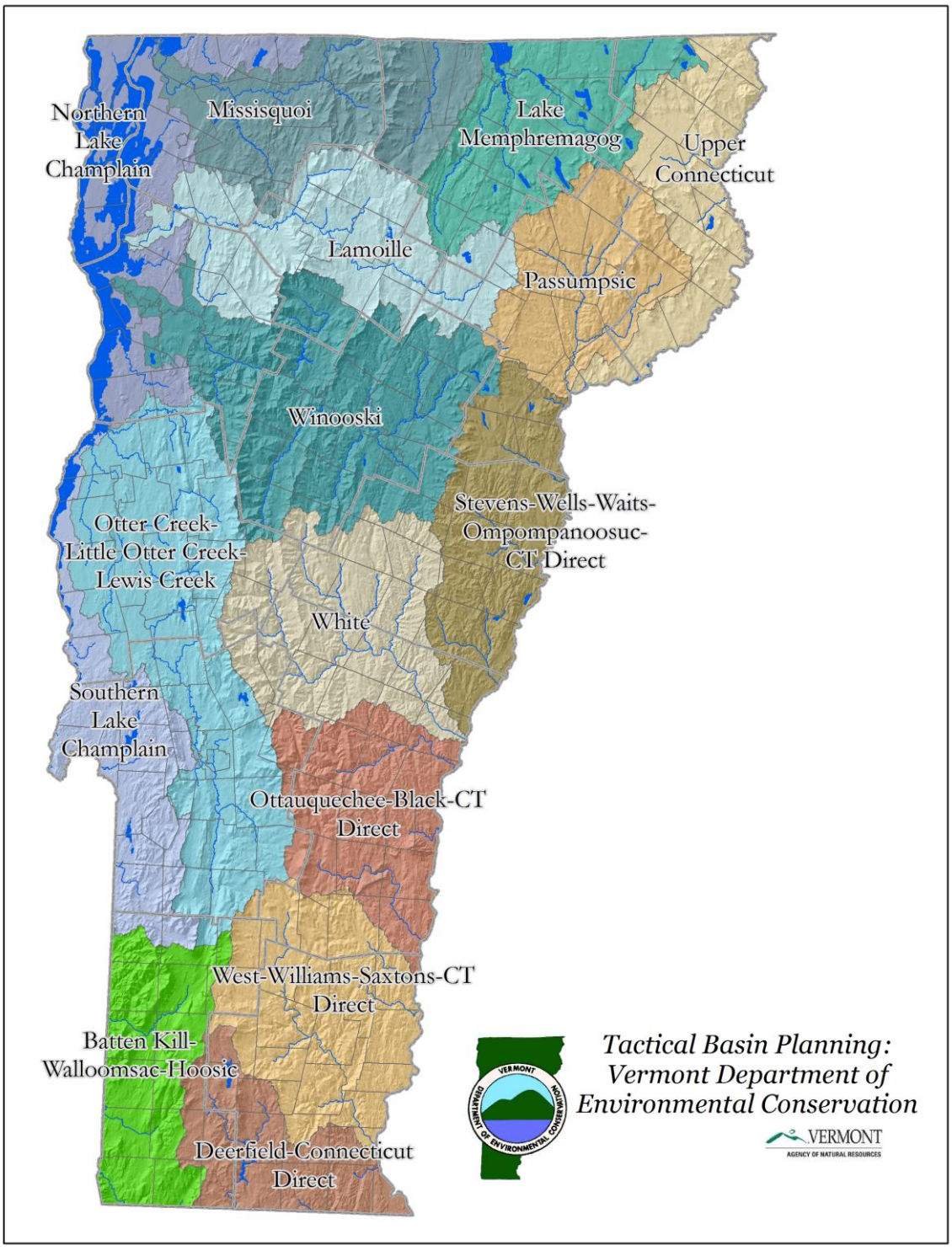
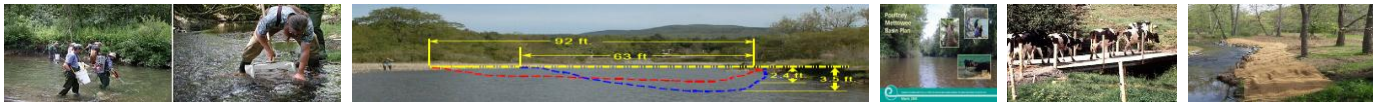


Figure 1 – Proposed Basin Map with Proposed Planner Districts



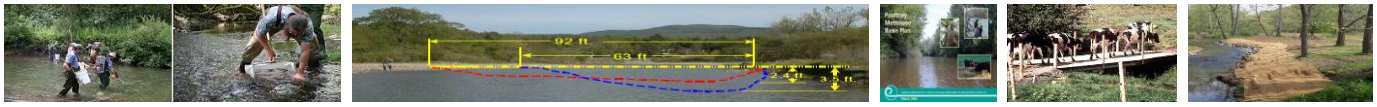
H. Structure of the Tactical Basin Plans

Each Tactical Basin Plan will provide an introduction about the tactical planning process, a description of the basin and priority sub-basins that are areas of focus and a prioritization of primary stressors in the basin where strategies will be focused to address the activities causing the stressor(s).

In general, tactical basin plans will be developed to incorporate the following strategies:

- Strategies that address impaired or altered waters
- Strategies that address protection of certain high quality waters and "Healthy Watersheds"
- Strategies that address new threats to surface waters, stressors that affect large areas of the basin, or stressors that are top priorities for other reasons. These stressors may be targeted by:
    1. Specific sub-basins within the rotational basin planning process for focused monitoring, assessment, protection, restoration and outreach - (i.e., *targeted sub-basins*)
    2. By stream order- *in order to target priority statewide and surface water stressors and strategies for focused areas of the basin and sub-basins.*

Where problems affecting impaired waters are known and solutions are clear, the plan will contain specific remediation actions. For such waters, this would include a list of actions to be taken, who will take those actions, a timeline for completion of the actions, an estimate of the cost of the action and an indication of the most probable funding for the action. Where the problems are not fully known, or solutions are not clear, an adaptive management strategy will be adopted. Here, the plan will contain a strategy for reasonable actions that should improve the impaired waters, as well as a process to acquire the necessary information to further define the problem and develop new solutions as soon as reasonably possible. In this regard, ongoing monitoring and assessment programs will determine whether or not we are moving towards desired water quality improvement goal(s).



I. Tactical Plan Outline

The outline of a tactical basin plan is as follows:

Executive Summary

- An overview of known stressors, issues and proposed actions.
- Top 10 actions
- Summary of classification opportunities.

Chapter 1. Introduction

- A brief basin description, purpose of the plan, planning process
- Partners in the planning process
- Expected implementation process.

Chapter 2. Water Quality in the Basin

- Textual summary of the character of basin
- Graphically intuitive watershed assessment "Report Card" describing basin condition
- Table of surface waters exhibiting very good or excellent biological, geomorphic, chemical, and/ or fisheries.
- Table of impaired, stressed, and altered waters, with reference to specific stressors, and linked to stressor chapters. Strategies identified by Agency with coordinated partner response.
- Table of surface water Total Maximum Daily Loads including TMDL summary information such as loading capacity, margin of safety, load allocation, and wasteload allocation.
- Emerging threats to surface waters, stressors that affect large areas of the basin, or stressors that are top priorities for other reasons.
- Identification of priority subwatersheds for targeted implementation.
- Identification of priority subwatersheds for focused monitoring and assessment.
- Identification of potential "Healthy Watersheds" areas, for targeted protection.
- Identification of certain water quality issues by stream order for focused areas of the basin and sub-basins.

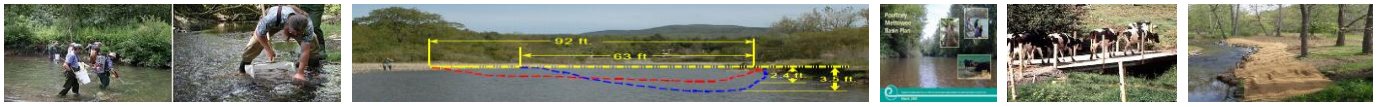
Chapter 3. Establishing Management and Protection Goals for Surface Waters

- Existing Uses[1]
- Opportunities for Outstanding Resource Water Designations
- Opportunities for Class B to Class A1 Reclassification
- Opportunities for Class A(2) to B Reclassification
- Opportunities for Class 1 Wetland Designation
- Statement on Water Management Typing

Chapter 4. Implementation Table /Maps

Appendices

[1] Note that as of this writing, the Division is considering the development of a Statewide listing of Existing Uses that would be harvested from existing adopted or approved basin plans, and presented in one easily accessed location.



About Implementation Tables and Maps

An implementation table included in each Plan will identify objectives and frame-out geographically or programmatically specific actions. It is anticipated that the list of action items will first be expanded, based on input from Agency staff and watershed partners, and later prioritized and refined based on technical input and stakeholder outreach. Financial resources will be identified to implement specific actions. Action items include both data collection and assessment efforts and specific implementation activities. Action items should be able to be accomplished within the next five years, and reflect goals and objectives identified in the Statewide Surface Water Management Strategy. The implementation table will be catalogued by restoration, protection, and monitoring and assessment activities, and will catalogue necessary as well as completed projects. An example implementation table may be seen in the newly approved Otter Creek Basin Water Quality Management Plan (http://www.anr.state.vt.us/dec/waterq/mapp/docs/mp_ottercreekplan.pdf, page 63). Map representations (Figure 2) will be used for particular types of activities.

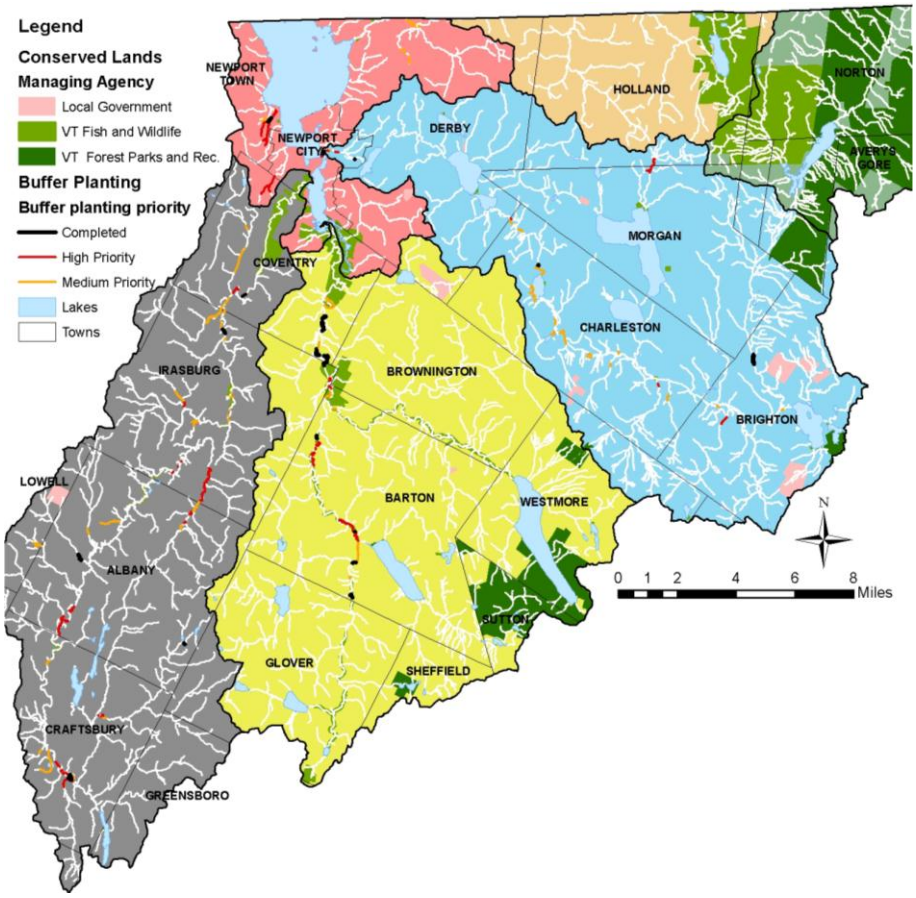
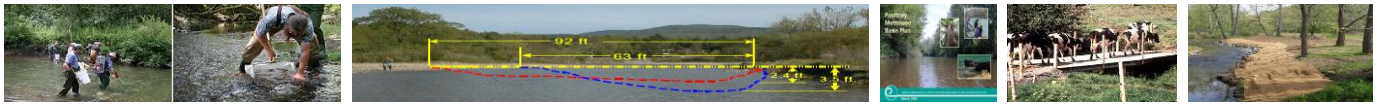


Figure 2. Map showing high and medium priority buffer planting projects and projects already completed in the Memphremagog Basin.

Implementation tables will also point to specific projects or actions that are necessary to achieve compliance with a TMDL for a specific impaired water. In these instances, as feasible the Division will include pollutant load reduction estimates that may result from complete implementation. This information will be provided in fulfillment of EPA requirements for "Watershed Based Plans." All actions



that are intended to support a major TMDL (e.g., Champlain, Memphremagog, Long Island Sound) will be so-identified in the implementation table such that TMDL implementation can be tracked thru tactical basin planning. Components of the implementation table will ultimately be served online via the Vermont Integrated Watershed Assessment System, which is currently under development.

J. Resources to Support Tactical Basin Planning

WSMD Staff Support

Watershed Management Division (WSMD) and internal and external partners play a role in natural resource monitoring and assessment. These partners provide monitoring and assessment, planning and technical assistance (River Management, Wetlands, Stormwater, and Lakes and Ponds) initially, broadening out to include other programs within the Department of Environmental Conservation (DEC), Agency of Natural Resources (ANR), and sister agencies (VTRANS and AAFM). This workgroup will meet annually to compare notes, plan and coordinate the monitoring and data gathering efforts to occur in the coming year for the purpose of stretching monitoring resources around the state. They coordinate high-level objectives and who will sample what, where and when.

Watershed Coordinators/ Basin Planners

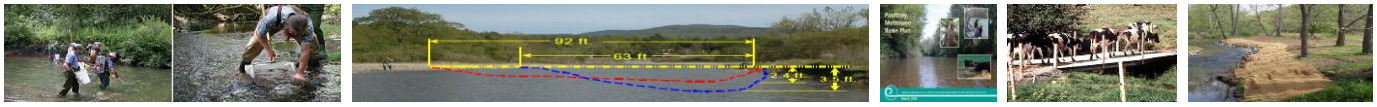
Watershed coordinators serve as liaisons in a given basin planning process among the agencies, the basin stakeholders and local concerns. Their job is to specialize in their watershed, to know what resources might be available to address the concerns and facilitate the tactical basin planning process to develop and implement plans that address high priority issues and known stressors in each basin.

River Basin Teams

River basin teams are the field-level, technical groups within the tactical planning process. These teams are composed of field staff from most State and Federal Natural Resource Agencies (e.g. USDA-NRCS), Regional Planning Commissions, Natural Resource Conservation Districts, Watershed Organizations, and citizen advocates. These teams help in development of monitoring strategies, education and outreach, prioritization of issues and watersheds within the basin, planning, and networking among technical staff and local leaders to apply agency resources to implement strategies identified in tactical basin plans.

The Vermont Integrated Watershed Information System: V-IWIS

V-IWIS is envisioned as an watershed information data viewing and reporting system that is intended to support integrated water management planning activities across Division programs, and in support of DEC and ANR's efforts to manage waters. The system as envisioned provides a foundational tool for the



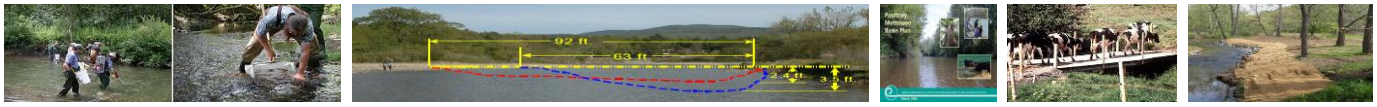
implementation of the Statewide Surface Water Management Strategy. The system is designed to streamline and automate the development of watershed assessment reports and to support development of watershed-specific implementation plans. The envisioned system will provide access to geographically-integrated water quality information and data to internal and external users with the goal of providing visual, map-based integrated assessments of watershed attributes, condition, and improvement measures (projects), at user-selectable scales. A second goal is that the system will generate pre-populated reports to internal users that facilitate the development of watershed assessment reports.

K. Funding

The Division's intent is that the identified priorities that are explicitly identified in tactical basin plans become the priority items to be funded using the Division's implementation funding mechanisms. To this end, the process by which Ecosystem Restoration Program and other water quality planning and remediation funds are distributed has been re-engineered to align with the Tactical Planning Process. Throughout the process of Plan development, partner organizations are encouraged to participate in a meaningful prioritization exercise that will identify the highest priority items for State support. As a component of the Tactical Planning Process, watershed coordinators serve as a focal point for the development of Ecosystem Restoration Program grant applications. Projects that are specifically identified in Tactical Plans and associated river corridor or other relevant Plans receive higher scoring in the allocation rubric.

Further, through the Tactical Planning Process, the Division endeavors to ensure that:

- ✓ state dollars are invested in the most important water quality projects;
- ✓ state dollars are leveraged in every way possible to attract additional federal or private funds for appropriate and priority projects;
- ✓ existing federal authorizations related to Vermont are appropriated to the maximum extent practicable;
- ✓ there is accounting for successful pollution reductions throughout all aspects of ANR work, whether from forest and recreation, fish and wildlife, or environmental conservation actions; and
- ✓ unique, widely applicable sets of priority funding recommendations are reflected in each basin in the tactical planning queue.



L. Schedule for Tactical Plan Development and Issuance

The Division has established a revised schedule for the issuance of Tactical Basin Plans that adheres to the five-year rotation established by VT Water Quality Standards. Table 3 provides a description of the current status for each planning basin. Table 4 provides the envisioned timeline for tactical plan development from 2011 to 2016.

Table 3. Overall Status of Basin Planning as of August, 2012.

Basin	Year of most recent plan issuance	Planning phase for 2012
Basin 1 Battenkill, Walloomsac, Hoosic	Prior to 2000	Assessment
Basin 2 and 4 Poultney, Mettawee, Lower Champlain Direct	2005	Assessment, Tactical Planning
Basin 3 Otter, Little Otter, Lewis	2012	Implementation
Basin 5 Upper LC, LaPlatte, Malletts Bay, St. Albans Bay,	2009	Assessment
Basin 6 Missisquoi	Prior to 2000	Revisions to RPC-prepared Plan, implementation table development. Rollout scheduled for 2012.
Basin 7 Lamoille	2009	Implementation
Basin 8 Winooski	2012	Implementation
Basin 9 White	2002	Monitoring and Tactical Planning
Basin 10 (13) Ottauquechee, Black	2012	Implementation
Basin 11 & 13 Williams, West, Saxtons, Lower CT,	2008	Monitoring
Basin 12 & 13 Deerfield, Lower CT, Mill	Prior to 2000	Tactical Planning
Basin 14 Stevens, Wells, Waits, Ompompanoosuc	2008	Monitoring
Basin 15 / 16 – Northern CT River Watersheds	Prior to 2000	Tactical Planning, Monitoring in Basin 16
Basin 17 Memphremagog, Coaticook, Tomifobia	2012	Implementation

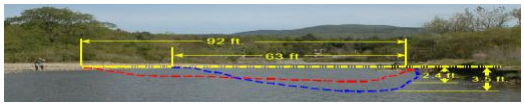
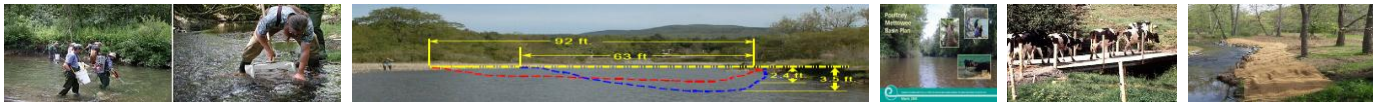





Table 4. Envisioned Tactical Planning Rotation, 2011 to 2016.

Basin	Activity	2011	2012	2013	2014	2015	2016
Basin 15	M+A	Assess				Mon	Assess
	Planning	Start		Finish			
Basin 16	M+A		Assess				Mon
	Planning	Start		Finish			
Basin 17	M+A				Mon	Assess	
	Planning	Finish				Start	Finish
Basin 1	M+A			Mon	Assess		
	Planning				Start	Finish	
Basin 2 and 4	M+A	Mon	Assess				Mon
	Planning		Start	Finish			
Basin 3	M+A					Mon	Assess
	Planning	Finish					Start
Basin 7	M+A			Mon	Assess		
	Planning					Start	Finish
Basin 9/16	M+A	Assess			Mon	Assess	
	Planning	Start	Finish				
Basin 14/16	M+A		Mon	Assess			
	Planning			Start	Finish		
Basin 5	M+A	Mon	Assess				Mon
	Planning			Start	Finish		
Basin 6	M+A			Mon	Assess		
	Planning		Finish			Start	Finish
Basin 8	M+A					Mon	Assess
	Planning	Start	Finish				
Basin 10 (13)	M+A				Mon	Assess	
	Planning	Finish					Start
Basin 11 & 13	M+A		Mon	Assess			
	Planning				Start	Finish	
Basin 12 & 13	M+A	Assess					Mon
	Planning		Start	Finish			



M. Benefits to Tactical Basin Planning

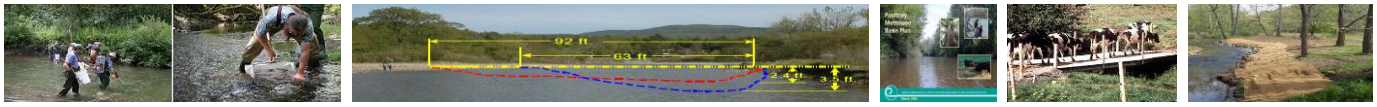
The Division recognizes that there are commonalities between the "Guidelines" and the Tactical Planning Process, but also some differences. The Division is committed to full implementation of the Tactical Planning Process, as there are several advantages and benefits. These include:

- ***More direct focus on the resource to be protected***, tailored to basin-specific stressors and conditions that are germane to that basin and sub-basins.
- ***Coordination among programs and agencies that perform similar duties***, thereby making technical assistance and available funding a more efficient and predictable process.
- ***Improved capabilities*** to address complex environmental issues that cross agencies' jurisdictions.
- ***Improved basis for management decisions*** as better coordination of monitoring is established and more information is gathered on a specific basin.
- ***Consistency and continuity*** is encouraged as an initial framework is prepared and applied to all basins and sub-basins in a systematic and sequential (rotational) fashion.
- ***Opportunities for enhanced data sharing*** as agencies and organizations improve communication and coordination.
- ***Encouragement of innovative solutions*** with input from the various stakeholders and partners.

N. Approaches for Better Protection of Vermont's Surface Waters

In addition to the creation of MAPP and the development of this Statewide Surface Water Strategy, the WSMD recently took the lead in crafting the Department's Interim Anti-Degradation Implementation Procedure. During all of these efforts, the WSMD has had intensive discussions regarding how to better refine the identification of Vermont's high quality waters beyond the existing Class A and B scheme. A more finely tuned identification scheme could then be used to better tailor water quality criteria and management strategies, including permit requirements, to protect Vermont's waters.

This chapter has already described the future of basin planning. With the creation of MAPP and the Strategy, the new process us underway. However, water management typing is still a requirement in state law and must be addressed. Recent changes to surface water rulemaking authority enacted by Act 138 now allow the Division to lead a process to examine water



management typing alongside a suite of other possible classification tools. The WSMD will continue to discuss classification approaches for enhancing surface water protection with stakeholders before engaging rulemaking that may change the way the Water Quality Standards describe water management typing.

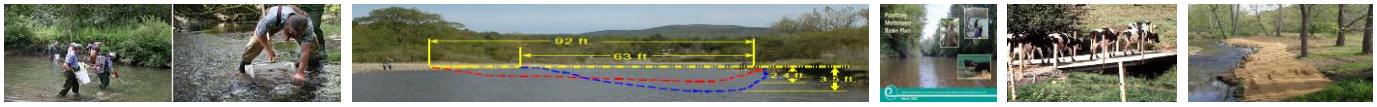
A number of statewide inventories as well as watershed-wide plans and monitoring and assessment reports specifically highlight some of Vermont's exceptional rivers and streams for aquatic community health and human recreational use. These documents and studies could be used as a starting point for identification of the waters warranting enhanced protection. A number of different ways to better protect these "special" waters are discussed in this section.

Class A Re-Classifications

The 1986 "Pristine Streams Act" created the opportunity for any waterbody supporting habitat that is ecologically significant and has water quality that meets at least Class B standards to be re-classified to Class A. A re-classification is a rulemaking procedure before the Water Resources Panel where a public interest determination must be made pursuant to Vermont's Water Pollution Control Statute, 10 VSA §1253. Class A1 ecological waters must be managed to "achieve and maintain waters in a natural condition." All waters above 2,500 feet NGVD are Class A1 waters. Rivers and streams petitioned to be Class A1 waters to date are few and include: Kidder Brook and tributaries, Cobb Brook, Upper Reach of the Winhall River, and Cold Brook and its tributaries. Additional streams have the water quality that is worthy of Class A designation.

Opportunities to better protect Class A1 waters

Water quality standards for Class A1 waters are stricter than those for Class B waters, thereby providing a means for protecting these ecologically intact waters. There are a number of ways to enhance review and protection of these excellent waters. First, Act 250 regulates development above 2500 feet where the bulk of Class A1 waters exist at this point, but there is not always Act 250 review for developments in A1 watersheds below the 2500 foot elevation. This could be changed with the addition of "development with a Class A watershed" as a trigger for Act 250 review. In addition, the "Headwaters" criterion (1A) could be used to much more specifically protect Class A waters. There are no current guidelines for protection of these waters but rather the guidance is that if several other criteria in Act 250 are met then, by default, this Headwaters



criterion is met. Development thresholds and thresholds for more stringent management practices could be added to the requirements for a project to meet this criterion.

Creating a New Classification or Use Designations of Waters

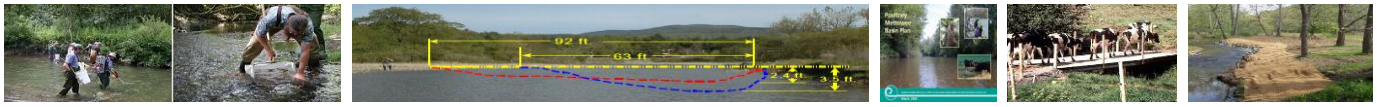
Another method for further differentiating among Class B waters would be to create new class(es) or Use designations of waters in Vermont, rather than using water management typing. An ongoing debate relating to water management typing is whether or not it created a new class of waters, and if so, whether it was authorized under Vermont law. The creation of additional classes of waters or use designations would require an amendment to 10 V.S.A. Chapter 47. Certain states have many more classes of waters to describe their diverse water resources with greater specificity. Other States achieve similar specificity by identifying specific uses that are designated to surface waters.

Class 1 Wetland Designation

There have only been three Class 1 wetlands designated in Vermont to date but there are others that qualify for this category, which enjoys additional statutory and regulatory protection. Currently, the wetlands designated as Class 1 include: Dorset Marsh in Dorset; Tinmouth Channel in Tinmouth; and North Shore Wetland in Burlington. All four Basin Plans approved during 2012 contain specific recommendations for wetland reclassification to Class 1.

Outstanding Resource Waters (Tier 3 of Anti-Degradation)

An additional tool to manage and protect Vermont's waters is through the designation of Outstanding Resource Waters (ORWs) pursuant to Tier 3 of Vermont's Anti-Degradation Policy and 10 V.S.A. §1424. ORWs are waters of the State designated by the Vermont Water Resources Panel pursuant to 10 V.S.A. §1424a as having exceptional natural, recreational, cultural or scenic values. To gain an ORW designation, petitioners must provide evidence and testimony, in a contested case hearing before the Panel, that the waters in question have exceptional natural, cultural, scenic, or recreational values. To date, the following waters have been designated as ORWs: the Batten Kill and its West Branch, Pikes Falls on the North Branch of Ball Mountain Brook, the lower Poultney River and Great Falls on the Ompompanoosuc River. No ORWs have been designated since 1996. All four Basin Plans approved during 2012 contain specific recommendations for ORW designation.



Existing Uses (Tier 1 of Anti-Degradation)

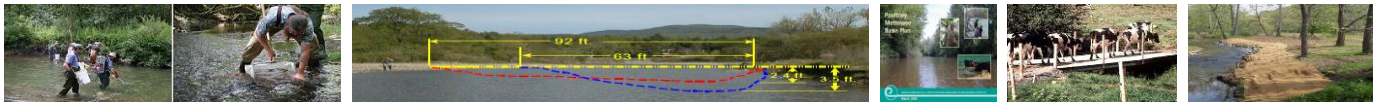
"Existing uses" are those uses of waters that have been designated by the Secretary and have actually occurred on or after November 28, 1975, in or on waters, whether or not the use is included in the classification of the water, and whether or not the use is actually occurring. Once an existing uses is designated by the Secretary, the use cannot be eliminated. In addition, the level of water quality necessary to protect an existing use must be maintained and protected.

Historically, the Agency has designated well known and documented existing uses, e.g. swimming holes. In the White River Basin Plan, boating was identified as an existing uses along the mainstem of the White River. Other uses, such as fishing have also been recognized. In order to protect existing uses, the basin planning and permitting processes could expand both the number and type of existing uses that are identified and designated for existing use protection. All Basin Plans issued to date have identified existing uses consistent with the DEC's procedure, in compliance with the Water Quality Standards. In addition, the Division is considering development of a Statewide listing of existing uses, which would take the place of Basin Plan-specific lists that are currently published.

High Quality Waters (Tier 2 of Anti-Degradation)

Tier 2 of the Vermont Anti-Degradation Policy provides for the protection of high quality waters, which are waters the quality of which exceed minimum standards for Class B. The Agency applies this level of protection on a parameter by parameter basis; i.e. the impact of a proposed discharge is evaluated on the basis of individual parameters such as dissolved oxygen, or pH. A high quality water must be protected to ensure not only that minimum standards will be achieved, but that a lowering of water quality is allowed only when the Secretary determines that the widespread social and economic impacts of not allowing the lowering of water quality exceed the benefits of maintaining it.

There are two ways that Tier 2 anti-degradation review could be used to better refine protection of Class B Waters. This is similar to water management typing which represents a more refined description of a Class B water based on more detailed criteria such as aquatic biota, wildlife and aquatic habitat, hydrology, boating or aesthetics. These two approaches using Tier 2 include:



Identification of High Quality Waters by Certain Uses

In addition to evaluating high quality waters on a parameter by parameter basis, which the Department currently does, it could also designate and evaluate waters on a waterbody by waterbody basis. Many states create specific designations of high quality waters that correspond to a use that is protected for a given type of waterbody. For example, high quality waters could be designated based on meeting certain thresholds for wild brook trout fisheries, for water quality or for water chemistry. Very specific criteria would be developed to determine which waters qualified for these special waterbody designations and standards would be tailored to protect these waters. For instance, if a waterbody was designated as a wild trout fishery, then proposed activities would be evaluated against tailored criteria to determine if the level of water quality necessary to maintain the wild trout population is sustained.

Development of a "Tier 2.5" Level of Protection for Certain High Quality Waters

Certain states have created a Tier 2.5 as part of their anti-degradation policy in order to create a level of water protection higher than Tier 2 for waters that meet certain characteristics, but is not as restrictive as Tier 3 (Outstanding Resource Waters). EPA has supported Tier 2.5 by states to create a higher level of protection that is tailored to each state's desire to beyond the protection afforded under Tier 2. For example, Delaware and Rhode Island use this approach to protect waters that are of exceptional recreational or ecological significance. The designation of a Tier 2.5 water is not necessarily based on exceptional water quality, but instead focuses on the particular use that is to be protected. For example, the presence of an important recreational use (wild trout fishery, white water rafting) or presence of an endangered species could be the basis for Tier 2.5 protection.